Thousands wage war on rabbits

Canberra Times
Wednesday 17 June
1992

By ROGER FRYER

RABBITS! Those cute little furry critters have spawned quite a culture — a thriving trade overseas in Aussie hats, a popular cartoon character, a depression-busting meat and skin industry now being revived, and a multi-million-dollar government-subsidised eradication program employing thousands.

While scientists have their heads down searching for a new way to control them and impoverished farmers take tourists ferreting, out in far western NSW they have decided, if you can't beat 'em, bulldoze 'em.

Heavy funding has been directed towards enhancing biological control methods using genetic engineering, and a big public relations campaign has been launched to convince the public of the wisdom of this research. However, research into conventional control techniques has shown that it is already possible to control rabbits economically with available technology, using bulldozers to plough their warrens into the ground.

Australia is a world leader in genetic engineering and there will be many lucrative spin-offs from the research even if it fails to control rabbits. But it would be unwise to neglect the present available options in favour of an uncertain if rosey future. Better biological control methods may be 20 years away, and could be unsuccessful unless combined with conventional methods already proved.

Australia is not alone in having problems with rabbits, although their dramatic spread remains a world record for an introduced pest. They were brought to England from France at the time of the Norman Conquest and initially failed to proliferate. But changes in farming practices provided harbour and grazing and in the 19th century they had increased so much the English Parliament was pressured by a forestry lobby to seek methods of controlling them.

They were protected by law, however, for the Lord of the Manor's hunting privileges, and have been credited with radicalisation of lower classes in England by their ravages and by persecution of poachers.

Grasslands ecosystems the world over revolve around a leporid (rabbit or hare species) or equivalent. They consume a major proportion of digestible plants and determine which of the others will regenerate. They provide food for a large range of predators and their breeding pattern revs up if you attempt to exploit it.

In prc-European Australia this role was taken by bilbies, bandicoots, rat-kangaroos and hare-wallabies which were preyed upon by thylacines, quolls and eagles. Rabbits have replaced them all, and are preyed on by foxes and

cats which are dependent on them and preventing the rehabilitation of the displaced native species and threatening what is left.

We have encouraged the spread of this disaster by over-grazing the sensitive native grasses with our livestock and replacing them with introduced grasses which are better suited to the rabbit's reproductive cycle and nutrition requirements.

In response, rabbits are now biting the hand that has fed them. Their significance in prevention of regeneration of perennial plant species, particularly natives such as mulga, is regarded by many scientists as the greatest threat to the Australian biosphere. The impact of this will not be seen till some time in the future when species such as mulga, which has a life-span of 300 years, die out. Trees and shrubs may disappear in the acacia-dominated landscapes of the Northern Territory without rabbit control.

Losses to agricultural production have been estimated at $90 million annually. In the rangelands some properties may be losing 40 per cent of their potential production. Rabbits at only one per hectare can lower production by 25 per cent in low-carrying country.

Between 1988 and 1991, Kent Williams and Robert Moore, of the CSIRO Division of Wildlife and Ecology in Canberra, compared the cost-effectiveness of combinations of initial rabbit-control treatments of poisoning, warren-ripping and pressure fumigation, with follow-up treatments of diffusion fumigation. At the same time, Ian Parer and George Milkovits studied the recolonisation of rabbits into areas from which rabbits had been eradicated by control methods such as ripping, fumigation, shooting and dogging.

Rabbits in Australia set a world record for the spread of an introduced pest. They have shown that rabbits can be controlled with available technology and that the long-term denudation of the rangclands may be avoided. The message they bring is simple: warren-ripping is the most effective single method of rabbit control, and recolonisation can be prevented by a cooperative effort at effective control among landholders.

According to Ian Parer, the importance of the warren to the rabbit is the weak link in its armour. In newly colonised areas individual rabbits initially live in a shallow scrape called a "squat". A pregnant female then digs a squat out to form a shallow burrow called a "stop". More tunnels may be dug from the stop for successive litters, turning it into a warren. The deeper the tunnels are, the more protection they offer from foxes.

The warren provides enhanced protection for the young, born blind, deaf and immobile after a

gestation period of 30 days. This short gestation period contributes to the rabbits' high reproductive rate. After warrens are formed the rabbit population explodes. The warren also enables rabbits to colonise open grasslands without cover, and provides them with protection from climatic extremes.

Warren-ripping by conventional tractors, while effective in higher rainfall and coastal areas, is slow and likely to be expensive in the arid and semi-arid rangelands. A rubber-tyred tractor with a single ripping tine must make several passes to effectively close a warren. Only up to 30 warrens a day could be ripped by this method.

However, "new technology" in the form of large crawler tractors has made warren-ripping possible in places where it was previously thought impossible. Crawler tractors have also greatly increased the speed at which warrens can be ripped. With five tines, a large crawler tractor can rip a warren thoroughly in one pass. It is now possible to rip nearly 400 warrens in a day.

It may still seem prohibitively expensive to attempt to control rabbits throughout Australia using improved conventional control techniques, but is this really the case? To find out, Ian Parer calculated the likely cost to the Federal Government of effective rabbit control in the Western Division of NSW, a large area of rangelands notorious for droughts, overstocking, land degradation and rabbits.

He relied on figures which indicated that the cost of ripping in two Rangecare areas near Broken Hill in western NSW, using a 120hp crawler tractor with winged boots on the tines, averaged less than $2 a hectare, with annual maintenance

control costs about 5 per cent of the initial costs.

He found that on the 877,000ha of national parks and reserves in the Western Division, not all of which is badly infested with rabbits, the maximum cost at $2 a hectare would be $1.75 million for the initial ripping with recurrent annual maintenance costs of $50,000 to $150,000, which would decline with time.

On the 31.6 million hectares of grazing land, a government subsidy of 40 per cent of the cost of the initial warren-ripping would be sufficient incentive for most graziers to carry out rabbit control.

The maximum cost to the government would be $25 million, but as only 60 per cent of the area is badly infested, the more likely cost would be $15-20 million.

The cost of warren-ripping could be recouped by increasing the stocking rate or by maintaining previous stocking rates and relying on increased wool growth and lambing percentages. The latter strategy is preferable, as it is less likely to lead to land degradation, and the cost of ripping may be recovered in two to three years at a wool price of $7 a kilogram.

Meanwhile, back in the lab, the discovery of genetic-engineering techniques has presented researchers with a wide range of new possibilities for biological control programs.

Research into increasing the effectiveness of myxomatosis at the CSIRO Division of Wildlife and Ecology is now directed towards engineering the myxoma virus to cause infertility in rabbits.

This is hitting rabbits where it hurts. It is better to control pests with high fecundity (reproduction rate) by lowering reproduction than by increasing mortality. Hunting, for instance, may drive the animals to breed faster, and poisoning with 1080 is doomed to long-term failure as rabbits learn to detect the reputedly tasteless and odourless chemical in baits and to develop resistance to it.

Similar research is being carried out to eliminate foxes. It would be unwise, and perhaps devastating for wildlife, if foxes remained after rabbits disappeared. A search is under way to find a suitable virus, specific to foxes, to use as a vcctor for this "gene for infertility".

The CSIRO has also responded to pressure from farming organisations by beginning a study of rabbit hemorrhagic disease, a devastating disease first discovered in China in 1984, which has considerably reduced rabbit populations in Europe, Asia, and the Americas, even improving export opportunities for Australian producers.

Brian Cooke, of the South Australian Animal and Plant Control Commission, is continuing research into a species of Spanish flea which has potential to carry myxomatosis into arid areas where lack of suitable insect vectors has been limiting the disease's effectiveness.